

Method, Device, And Mobile Tool For Remotely Creating Electronic AlbumsBackground of the Invention5 Field of the Invention

The present invention relates to electronic albums that handle digital information such as picture data and sound data as a database automatically updated within a server, and, in particular, relates to a method of creating remotely electronic albums of, for example, trips by editing picture data taken with digital cameras or recorders during travel.

10 Description of the Related Art

A type of program software for electronic albums has been developed that handles digital pictures within a database. According to the electronic album software, it is possible, for example, to edit picture data taken with digital cameras during trips with indexes and comments affixed to the data of every picture to create albums. However, with conventional albums, the picture data are merely handled by every index and not fully utilized as electronic data.

15 Summary of the Invention

It would be convenient if an electronic album could be made in real time during a trip so that the album could be seen by other persons in other places to learn the circumstances of the trip and share the pleasure of the trip. It would be further convenient if a common electronic album could be created automatically from the data of pictures taken with plural cameras of a group of people making a trip. Further, if sounds from various locations are saved in an album in relation to their geographical locations, the album can be more interesting, useful, or informative.

The present invention is made in view of the above points to provide a method of creating electronic albums, with enhanced functions, of trips by making it possible during a trip to edit digital data (e.g., picture and/or sound data) taken during the trip

and create electronic albums that can be easily outputted. In the present invention, a “trip” includes any geographical movement or transfer using time as a parameter.

To accomplish the above object, in an embodiment, the present invention provides a method for remotely creating electronic albums, comprising the steps of: (a) obtaining digital data of interest at a location with reference to a time; (b) obtaining position data of the location with reference to a time; (c) sending the digital data from a mobile terminal to a server through the Internet; (d) sending the position data from a mobile terminal to the server through the Internet; (e) receiving the digital data and the position data by the server; (f) creating and updating an electronic album using software programmed to associate the digital data and the position data based on the recorded times, said software being provided in the server; and (g) repeating steps (a) through (f) at a different location or at a different time.

In the above, the digital data can be picture data or sound data or any suitable digital data. The picture data may include animated picture data and still picture data. The picture data can be taken with a digital camera, for example. The position data can be taken with a GPS device, for example. The mobile terminal in step (c) can be used in step (d).

In an embodiment, the method may further comprise sending comment information including text data inputted by a mobile terminal to the server through the Internet with reference to a time; and incorporating the information into the electronic album using the software, wherein the software is further capable of associating the comment information with the digital data and the position data based on the recorded times. In another embodiment, the method may further comprise editing the comment information by a computer connected to the Internet.

In yet another embodiment, the method may further comprise inputting a user’s name and a password when sending the digital data and the position data, wherein the server receives the user’s name and the password and creates and edits the electronic album in accordance with the name and the password. In the above, the server may receive the user’s name and the password from multiple users, and the electronic album is created and edited as an album common to the multiple users.

The present invention can equally be adapted to a system for remotely creating electronic albums. In an embodiment, the system comprising: (i) a first device for obtaining digital data of interest at a location with reference to a time; (ii) a second device for obtaining position data of the location with reference to a time; (iii) a server connected to the Internet, said server comprising software programmed to associate the digital data and the position data based on the recorded times, thereby creating and editing an electronic album; (iv) a first mobile terminal for sending the digital data to the server through the Internet; and (v) a second mobile terminal for sending the position data to the server through the Internet. In an embodiment, the system may include more than one first device, more than one second device, more than one first terminal, and/or more than one second terminals, as well as more than one user's computer and/or more than one third mobile terminal.

For purposes of summarizing the invention and the advantages achieved over the prior art, certain objects and advantages of the invention have been described above. Of course, it is to be understood that not necessarily all such objects or advantages may be achieved in accordance with any particular embodiment of the invention. Thus, for example, those skilled in the art will recognize that the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other objects or advantages as may be taught or suggested herein.

Further aspects, features and advantages of the present invention will become apparent from the detailed description of the preferred embodiments which follow.

Brief Description of the Drawings

These and other features of the present invention will now be described with reference to the drawings of preferred embodiments which are intended to illustrate and not to limit the invention.

FIG. 1 generally shows an entire system of the method of creating electronic albums of trips according to the invention.

FIG. 2 shows the constitution of an electronic album creating device provided in the server shown in FIG. 1.

FIG. 3 shows flowcharts of actions on the server's side and user's side in creating electronic albums of trips according to the invention.

In the figures, the description of reference numerals is as follows: 1a, 1b: Mobile terminals 2: Server 3: Digital camera 4: Internet 5: Digital camera 6: GPS receiver 7: User's computer 8: Data storage means 9: Program storage means 10: Data processing means 11: Electronic album editing means 12: Display 13: Electronic album creating device.

Detailed Description of the Preferred Embodiment

In an embodiment of the present invention, provided is a method for creating electronic albums of trips using program software provided in a server connected to the Internet for editing digital picture data to create electronic albums, said server being made capable of receiving: data of pictures taken with digital cameras, data of the times when the pictures are taken, position data acquired at a mobile terminal, and data of the times when the position data are acquired; said albums being made by associating the received pieces of information with each other.

With the above constitution, the server connected to the Internet has an electronic album creating program, so that picture data taken with digital cameras travelers carry during a trip are sent, automatically immediately or at constant time intervals together with data of the times when the pictures are taken, to a server, or a user enters and sends such data manually to the server. Together with the above data, time data on the trip route and the position data for the time data, comment data, etc. are sent from a separate mobile terminal to the server automatically or manually. The server receives such data, checks correspondence between the picture data and the position data according to the time, associates such data with each other, and edits them according to program software to create albums, each corresponding to a specific place.

In that case, since the electronic albums are created in the server connected to the Internet, the albums may be accessed from outside by matching a password to learn the situation of the trip and the surroundings by seeing electronic albums created in succession. Incidentally, data of not only still pictures but also animated pictures may be sent and edited into albums.

In a preferable example constitution, the server is characterized by being made capable of receiving comment information entered through the mobile terminal and capable of creating electronic albums by associating the comment information with the picture data.

5 With the above constitution, comments on the picture data are entered at the user's mobile terminal and sent to the server. The server, upon receiving the comments, associates the received comment information with already stored picture data to edit an electronic album. This makes it possible not only to create electronic albums with comments attached to picture data in real time during a trip but also to add comments
10 and other information after the trip, or to delete picture data, or to rewrite comments, so that any electronic albums may be edited that suit one's preference. Incidentally, the comment data may be entered in voice as well as in letters.

Another preferable example constitution is characterized by being made capable of editing the comment information using a user's computer connected to the Internet.

15 The above constitution provides improvement in convenience; it is possible for the user him/herself using a user's computer (a computer on the user's side) to associate the comment information with the picture data, etc. before they are sent to the server to edit them to some extent, and send the partially edited data from the user's computer or a mobile terminal to the server. Thus, it is possible to edit electronic albums using
20 personal computers, etc. other than the mobile terminal.

Still another example constitution is characterized in that the server is made capable of receiving a user's name and a password that are accessible from plural digital cameras to recognize the user from the user's name and the password and edit a common electronic album based on the data coming from the plural digital cameras.

25 With this constitution, it is possible for example to create a common electronic album through the following steps when a group of people makes a trip: Picture data of digital cameras carried by respective persons are sent to a server through the same user's name and password. The server receives and recognizes that the user is authentic, compares picture data acquired from different digital cameras on the basis of time data,
30 combines them with position data and comments, and automatically creates a common electronic album. In this way, the pleasure of the trip is shared and enhanced.

The present invention may further provide a device for creating electronic albums of trips characterized in that there are provided in a server connected to the Internet: a program storage means having stored program software for creating electronic albums by editing digital picture data, a data storage means for receiving and storing data of pictures taken with a digital camera, data of the times when the pictures are taken, position data acquired at a mobile terminal, and data of the times when the position data are acquired, a data processing means for associating the received pieces of information with each other, and an electronic album editing means for editing electronic albums according to the program software stored in the program storage means on the basis of the pieces of data associated with each other using the data processing means.

With the above constitution, the device for implementing the method of the invention described above is formed in the server, the electronic album creating program is pre-stored in the program storage means, various data, for creating the electronic album, sent from the user's side are temporarily stored in the data storage means, the above data are associated with each other by means of the data processing means, and the electronic album is edited with the electronic album editing means according to the above program and according to the association. Transmission of data is performed over the Internet connected to the server, and the created electronic album may be accessed by a third party over the Internet.

The present invention may further provide a mobile tool for creating electronic albums, characterized in that the mobile tool associates with each other data of pictures taken with digital cameras, data of the times when the pictures are taken, position data acquired at a mobile terminal, and data of the times when the position data are acquired and sends the associated data to a server that is connected to the Internet and provided with an electronic album creating device.

With the mobile tool of the above constitution, various data for creating electronic albums are associated with each other at the mobile terminal owned by the user, sent to the server provided with electronic album creating program, and the electronic albums are created in the server. The user on the mobile terminal side makes the data association according to the situation at that time or to the user's intention, and

makes albums of his preference. Incidentally, the data association and the data editing are also made in the server.

Embodiments

A method of creating electronic albums of trips according to the invention will be hereinafter described in reference to appended drawings.

FIG. 1 generally shows a constitution of the entire system for creating electronic albums of trips according to the invention. FIG. 2 shows a constitution of an electronic album creating device in the server of the system.

A standalone mobile terminal 1a, a mobile terminal 1b connected to plural digital cameras 3 and to a GPS receiver 6, and plural digital cameras 5 having communicating function and carried by users, are connected through the Internet 4 to a server 2. A user's computer (personal computer) 7 for the user to enter data is also connected to the server 2 through the Internet 4. The server 2 has functions of keeping picture data files, inputting and outputting data, controlling accesses, and creating electronic albums as shown in FIG. 2.

As shown in FIG. 2, an electronic album creating device 13 is formed in the server 2. The electronic album creating device 13 is made up of a data storage means 8, a program storage means 9, a data processing means 10, and an electronic album editing means 11. The electronic album editing means 11 is connected to a display 12 in the server 2.

The data storage means 8 temporarily stores data, for creating electronic albums, sent from the user's side through the Internet 4. The pieces of data sent from the user's side are; picture data taken with digital cameras, data of the times when those picture data are taken, position data acquired at the mobile terminal, time data at which the position data are acquired, and data of user's comments.

The picture data of the digital cameras 3 having no communicating function (FIG. 1) are transmitted through the mobile terminal 1b over the Internet. The picture data of the digital cameras 5 having communicating function (FIG. 1) are transmitted directly through the Internet. Each piece of picture data is transmitted together with the time data at which it is taken.

Position data are acquired from a GPS receiver 6 provided at the mobile terminal 1b and sent to the server 2. It is also possible for the user, without using the GPS position data, to manually specify position coordinates on an electronic map and enter them through the mobile terminal 1a or 1b, and transmit them. Together with the position data is transmitted its time data. This is used to identify positions of the picture data by comparing with the times of the picture data.

The comment data are those which the user wants to record on the album; user's feelings, surrounding situations, or sightseeing information, related to respective pictures, and entered by the user through the mobile terminal 1a or 1b.

The program storage means 9 stores a program software that automatically classifies and edits the received data and creates electronic albums on the basis of those data.

The data processing means 10 classifies the data, sent from the user and stored in the storing means 8, according to whether each piece of data is picture data, position data, etc by the program.

The electronic album editing means 11 creates electronic albums according to the program by editing the classified data; combining the pictures with dates, titles, comments, etc. Here, for different picture data from plural digital cameras, places are identified by comparing with time data, and pictures of the same place are edited in the same album under the same title.

The edited electronic album may be displayed on the display 12 in the server. It is also possible to display, not on the display 12 but on the mobile terminal 1a, 1b, or third party's terminal screen such as the user's computer 7 through the Internet.

It is also possible to send the various data for creating the electronic album from the user's computer 7 through the Internet 4 to the server 2. This makes it possible for example to create an electronic album using picture data from digital cameras in real time during a trip, to enter further new picture data and comment data from the user's computer 7 after the trip, or to re-edit the electronic album by deleting picture data from the created electronic album. In that way, an electronic album may be created that suites one's own preference.

It is also possible to store picture data or comment data acquired from the digital cameras 3 and 5 in succession into the mobile terminals 1a, 1b, or in the digital cameras 5 and to cause the mobile terminals 1a, 1b, and/or digital cameras 5 to gain access to the server 2 automatically at constant intervals to cause it to transmit picture data and position data. In that way, the electronic albums may be edited automatically during the trip.

Since the server 2 is connected to the Internet 4, electronic albums created with the server 2 may be disclosed outside; for example third party such as family members, friends, etc. may gain access to the server 2 over the Internet to see the electronic albums. Thus, the friends, etc. who are not joining the trip can learn the circumstances of the trip from different places in almost real time to share the pleasure of the trip.

When a group of users make a trip with each user carrying a digital camera, it is possible to create in real time an album that is common to the group by entering a password and a users' name registered in the electronic album software and by transmitting picture data. In that case, since positions and places of the picture data sent from different digital cameras may be identified by comparing with the time data sent together with the picture data, the common electronic album may be edited.

FIG. 3 is a flowchart of actions on the server's side and the user's side when creating electronic albums of trips according to the present invention.

FIG. 3(A) shows the actions on the server's side. The server, when accessed by a user, identifies the user by checking the user's name and the password (step a1).

When the user is recognized to be authentic as a result of checking the user's name and the password, data are taken from the digital cameras and mobile terminals being accessed (step a2). Those data are entered and stored in the data storage means 8 of the electronic album creating device 13 (FIG. 2) in the server. Those data are identified for their types with a data processing means 10 (FIG.2) (step a3). In case the received data are those of pictures, they are added to the area for storing picture data of the electronic album (step a4). In case they are position data, they are added to the area for storing position data (step a5). In case they are character data such as comments, they are added to the area for storing picture data or position data (step a6).

On the basis of the above data, picture data are classified according to program by place and time, affixed with comments and indexes, and automatically edited into an album (step a7). In that way the album of the trip is updated in real time on the server with the data sent in succession during the trip.

5 When the album is to be updated automatically, a program may be installed that gains access from the server's side to the mobile terminals and digital cameras of the registered users at constant time intervals to acquire data, or a program that, as described above, sends position data and picture data of the digital cameras automatically to the users' mobile terminals at constant time intervals.

10 FIG. 3(B) shows the actions on the user's side. The user sends the user's name and password to the server (step b1), and sends data required for creating the electronic album such as picture data and character data (step b2). If the user's name and password are correct here, each person of the group, as described above, sends data, so that a common album may be created.

15 Through the above process, the server stores the data of current position and pictured data based on the user's data in the form of an electronic album together with comments. Since the electronic album created as described above may be accessed from outside over the Internet, friends or the like persons who know the password can learn in real time how the friends are and how the trip is going on, and get up-to-date the local information in that area.

20 According to the invention as described above, picture data taken with digital cameras carried by travelers during trips are sent, immediately automatically or at constant time intervals together with data of times at which the pictures are taken, to the server. Together with the above data, time data on the trip route, position data of that
25 time, and comment data, etc. are sent from the mobile terminal to the server. The server's side receives those data, and on the basis of those data compares the picture data with the position data by time, affixes comments, and automatically edits in real time the data into electronic albums for specific places. In that case, since the electronic albums are created in the server connected to the Internet, they may be accessed from
30 outside by a matching password, so that the circumstances of the trip and the

surroundings may be learned by seeing electronic albums created from time to time during the trip.

It will be understood by those of skill in the art that numerous and various modifications can be made without departing from the spirit of the present invention.

5 Therefore, it should be clearly understood that the forms of the present invention are illustrative only and are not intended to limit the scope of the present invention.